## ABSTRACT

A preferred embodiment of a system for measuring a level of a fluid comprises a light source adapted to generate light having a predetermined wavelength, an optical waveguide slab at least partially filled with a material adapted to fluoresce when illuminated by the light having a predetermined wavelength, and a light pipe. The light pipe is adapted to transmit the light having a predetermined wavelength to the optical waveguide slab at an angle that causes the light to be internally reflected only within a portion of the optical waveguide slab located above the fluid thereby illuminating the fluorescent material within the portion of the optical waveguide slab located above the fluid. The preferred embodiment also comprises a photo-multiplier tube adapted to generate an electrical output in response to the fluorescence of the fluorescent material.